

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 13 and 26, and AMEND claims 2, 10, 11, 22 and 23 in accordance with the following:

1. (Cancelled)

2. (Currently Amended) A method of designing, constructing and operating a ~~workshop facility~~rolling bearing production facility using a computer having simulating means to formulate a virtual ~~workshop data model~~rolling bearing production facility, comprising:

storing information concerning existing rolling bearing production facilities including information regarding structure, control devices, operating conditions and layouts of existing rolling bearing production facilities~~structures of various rolling bearing production facilities and physical distribution facilities, which are to be newly established in a portion of newly established or existing workshops, information concerning structures of existing portions of these workshops, which are to be kept in existence, or information concerning structures of various rolling bearing production facilities and physical distribution facilities to be newly established in a newly established workshop designed newly in whole~~;

~~storing information concerning functions of the various facilities;~~

~~storing information concerning control devices of the various facilities;~~

~~storing information concerning configurations and information concerning adjustment conditions necessary to adjust the rolling bearing production facilities and the physical distribution facilities;~~

~~storing information concerning operating conditions and layouts of the various facilities of the workshop;~~

storing settings of adjustment conditions and operating conditions; simulating a virtual ~~workshop~~rolling bearing production facility utilizing the information and settings stored in the computer; simulating productivity during operation of the virtual ~~workshop~~rolling bearing production facility, wherein simulating productivity comprises: simulating manufacturing virtual products in the virtual workshop, and simulating a rolling bearing production state, including production of the virtual rolling bearings, production of virtual work in process, and distribution state, including flow of virtual work in process and flow of finished virtual rolling bearings on the layouts is monitored, verifying the virtual ~~workshop~~rolling bearing production facility by adjusting the information and settings stored in the computer so that the simulated productivity is optimized; constructing an actual completed ~~workshop~~rolling bearing production facility including various facilities and layouts compatible with the verified virtual ~~workshop~~rolling bearing production facility; remotely monitoring the ~~actual~~ ~~rolling bearing production facility~~rolling bearing production state and the physical distribution state of the facilities in the layout employed in the actual completed workshop so constructed; and comparing the rolling bearing production state and the physical distribution state ~~on~~of the layout in the actual completed ~~workshop~~rolling bearing production facility that have been monitored, with the ~~virtual~~ ~~rolling bearing production facility~~rolling bearing production state and the physical distribution state on the layouts that have been simulated, to update the data model, and; and selectively re-performing ~~verifying~~ the virtual ~~workshop~~verifying process~~rolling bearing production facility~~ based on the comparison to the actual rolling bearing production facility.

3-9. (Cancelled)

10. (Currently Amended) The method as claimed in claim 2, wherein during constructing the actual completed rolling bearing production facility the workshop deployment process, information on operating conditions set during the virtual workshop verifying the virtual rolling bearing production facility process are transmitted through a data communication means to the facilities of the actual workshop actual completed rolling bearing production facility.

11. (Currently Amended) The method as claimed in claim 2, further comprising: during the remote monitoring process, performing a remote maintenance of the actual completed rolling bearing production facility using information obtained during the remote monitoring.

12-21. (Cancelled)

22. (Currently Amended) A virtual workshop-remote rolling bearing production facility monitoring link system, comprising:

~~a virtual workshop system to verify a workshop which is to be newly constructed, the virtual workshop system comprising:~~

~~a computer;~~

~~a plurality of existing rolling bearing production facilities, which are to be newly established and at least one dedicated equipment having including modular units that can be interchangeably fitted one at a time to a process machine of a common specification, a rolling bearing production line being defined as at least one rolling bearing production facility, wherein~~

~~a virtual workshop authoring unit that authors a virtual workshop by storing in the computer information concerning structures, of various rolling bearing production facilities and physical distribution facilities of a workshop, information concerning functions, of the various facilities, information concerning control devices, of the facilities, information concerning configurations, and information concerning adjustment conditions, necessary to adjust the rolling bearing production facilities and the physical distribution facilities, and information concerning operating conditions and layouts of the various workshop facilities~~existing rolling bearing production facilities are stored in the computer, and;

a simulating means to simulate an optimized virtual rolling bearing production facility based on the information stored in the computer receive settings of the adjustment conditions and the operating conditions, and utilize the information stored in the computer to simulate productivity during operation of the virtual workshop, during which virtual rolling bearings are manufactured in the virtual workshop, production state, including production of the virtual rolling bearings, production of virtual work in process, and distribution state, including flow of virtual work in process and flow of finished virtual rolling bearings on the layouts is monitored, wherein the simulating means verifies the virtual workshop by altering the adjustment conditions and operating conditions so that the simulated production state and physical distribution state on the layouts is optimized when a modular unit of the production facility is interchanged;

an actual completed workshop rolling bearing production facility constructed to correspond to the verified virtual workshop optimized virtual rolling bearing production facility; and

a remote monitoring system remote monitoring the actual completed workshop rolling bearing production facility corresponding to the verified virtual workshop and the optimized virtual rolling bearing production facility,

wherein the remote monitoring system performs a remote maintenance in the actual completed workshop rolling bearing production facility using information obtained from the remote monitoring.

23. (Currently Amended) The virtual workshop remote rolling bearing production facility monitoring link system as claimed in claim 22, wherein the remote monitoring system displays an image of an operator at the actual completed workshop rolling bearing production facility and alphanumeric information used for monitoring or remote maintenance in side-by-side fashion, and transmits voice messages.

24-51. (Cancelled)